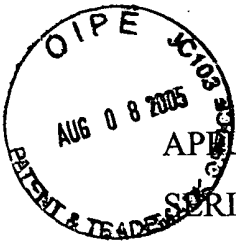


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



APPLICANT: Sheth et al.

SERIAL NO.: 09/712,780

CONFIRMATION NO.: 8860

FILING DATE: Nov. 13, 2000

TITLE: PPP DOMAIN NAME AND L2TP TUNNEL SELECTION

CONFIGURATION OVERRIDE

PATENT NO.: 6,874,030 B1

ISSUED: Mar. 29, 2005

EXAMINER: Patrice Winder (Primary) and David Lazaro (Assistant)

ART UNIT: 2155

Certificate  
AUG 12 2005  
of Correction

CERTIFICATE OF MAILING

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on the date printed below:

Date: August 4, 2005

Name: Penelope Sherman

Commissioner for Patents,  
P.O. Box 1450 Alexandria, VA 22313-1450

TRANSMITTAL FOR CERTIFICATE OF CORRECTION

We enclose, pursuant to the provisions of 37 C.F.R. §1.322, a Certificate of Correction for United States Patent No. 6,874,030. Please make the Certificate of Correction and the statements herein of record.

The corrections made to the above-identified United States Patent in the Certificate of Correction filed herewith are to correct mistakes which are of a minor character according to 35 U.S.C. §254 and 37 C.F.R. §1.322. The proposed corrections do not

constitute such changes in the patent as would constitute new matter or would require re-examination.

37 C.F.R. §1.322 Corrections


Please see attached Certificate of Correction.

No Fee Due

It is believed that no fee is required for filing the above-noted document. In the event any fee is required for filing of this Certificate of Correction, the Assistant Commissioner is hereby authorized to charge the fee to our Deposit Account No. 50-1698.

Respectfully submitted,  
THELEN REID & PRIEST LLP

Dated: August 2, 2005

  
\_\_\_\_\_  
David B. Ritchie  
Reg. No. 31,562

THELEN REID & PRIEST LLP  
P.O. Box 640640  
San Jose, CA 95164-0640  
(408) 292-5800 direct dial  
(408) 287-8040 direct fax

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 6,874,030 **B1**

DATED : March 29, 2005

INVENTOR(S) : Sheth et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

- 1) In column 3 line 10, replace "PPP messages 10 " with --PPP messages 110 --.
- 2) In column 6 line 13, replace "(DSLAMS)" with --(DSLAMS)--.
- 3) In column 9 line 4, replace "free connect" with --free to connect--.
- 4) In column 10 line 51, replace "network using" with --network, using--.
- 5) In column 11 line 10, replace "on in a" with --on a--.
- 6) In column 12 line 7, replace "on in a" with --on a--.
- 7) In column 12 line 44, replace "associated said" with --associated with said--.

MAILING ADDRESS OF SENDER: Thelen, Reid, & Priest  
P.O. Box 640640  
San Jose, CA 95164-0640

PATENT NO. 6,874,030

No. of additional copies

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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

AUG 12 2005

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 6,874,030 **BI**

DATED : March 29, 2005

INVENTOR(S) : Sheth et al.


It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

- 1) In column 3 line 10, replace "PPP messages 10 " with --PPP messages 110 --.
- 2) In column 6 line 13, replace "(DSLAMS)" with --(DSLAMs)--.
- 3) In column 9 line 4, replace "free connect" with --free to connect--.
- 4) In column 10 line 51, replace "network using" with --network, using--.
- 5) In column 11 line 10, replace "on in a" with --on a--.
- 6) In column 12 line 7, replace "on in a" with --on a--.
- 7) In column 12 line 44, replace "associated said" with --associated with said--.

MAILING ADDRESS OF SENDER: Thelen, Reid, & Priest  
P.O. Box 640640  
San Jose, CA 95164-0640

PATENT NO. 6,874,030

No. of additional copies

 1

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

AUG 12 2005

Please acknowledge receipt of the following by affixing hereon the Patent Office date stamp and returning said card to our office.

Inventors: Sheth et al.  
Filing Date: November 13, 2000  
Title: PPP DOMAIN NAME AND L2TP TUNNEL SELECTION  
CONFIGURATION OVERRIDE

Having: Utility Patent Application Transmittal, 22 pages of specification, 9 pages of claims, 1 page of Abstract, and 9 pages of drawings

Attorney: David B. Ritchie  
Docket No.: CISCO-3095  
Express Mail No.: EL575422536US



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D'ALESSANDRO

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Admin Initials \_\_\_\_\_

Please acknowledge receipt of the following by affixing hereon the Patent Office date stamp and returning said card to our office.

Inventors: Sheth et al.  
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Title: PPP DOMAIN NAME AND L2TP TUNNEL SELECTION  
CONFIGURATION OVERRIDE

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D'ALESSANDRO & RITCHIE

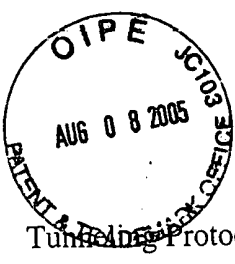
Having: Utility Patent Application Transmittal, 22 pages of specification, 9 pages of claims, 1 page of Abstract, and 9 pages of drawings

Attorney: David B. Ritchie  
Docket No.: CISCO-3095  
Express Mail No.: EL575422536US



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Admin Initials \_\_\_\_\_



Tunneling Protocol) or L2F (Layer Two Forwarding), or an IP-based (Internet Protocol) connection, such as used with ATM or frame relay. The user of the host computer 12, having established such a connection, has the ongoing capability to access the specified domain until the connection is terminated either at the directive of the user or by error in data transmission. The access point 14 will typically have the capability to connect the user to various other privately owned secured domain sites, such as the second private domain site 18 or the public Internet 20. The user of the host computer 12 may use the PPP protocol to connect through the wholesaler networks to another Home Gateway.

10

Layer 2 Tunneling Protocol (L2TP) is used in many Virtual Private Networks (VPNs). An L2TP access concentrator (LAC) is a device that the client directly connects to and that tunnels Point-to-Point (PPP) frames to the L2TP network server (LNS). The LAC is the initiator of incoming calls and the receiver of outgoing calls. An L2TP network server (LNS) is the Termination point for an L2TP tunnel and the access point where PPP frames are processed and passed to higher layer protocols. The LNS handles the server side of the L2TP protocol. The LNS terminates calls arriving at any of the LAC's PPP interfaces, including asynchronous, synchronous and ISDN. The LNS is the initiator of outgoing calls and the receiver of incoming calls.

20

Figure 2 is a block diagram that illustrates an L2TP tunnel and how a user typically connects to a privately owned domain site such as a corporate intranet. Using L2TP tunneling, an L2TP access concentrator (LAC) 100 located at the ISP's point of presence (POP) 105 exchanges PPP messages 110 with remote users 115 and

*Connection 1* →

ADSL (Asymmetric Digital Subscriber Line) may be used. Those of ordinary skill in the art will recognize that other types of broadcast mechanisms may be provided by an ISP or Telco such as Ethernet<sup>TM</sup>, frame relay, leased lines, ATM (Asynchronous Transfer Mode) or the like. Access points 345 are located within a wide area network (WAN) 350 and are operated by Telcos or ISPs. The access points 345 house AAA servers 355, Service Selection Gateways (not shown in Fig. 4), L2TP Access Concentrators (LACs) 360, Digital Subscriber Line Aggregation Multiplexers (DSLAMs) <sup>Correction 2y</sup> 365, 370, 375 or similar devices. The Service Selection Gateway (SSG) is not an integral part of the present invention and therefore a discussion related to their functionality would not benefit the discussion of the present invention. The SSG serves as a gateway between the user and public area domains, such as the Internet.

In order for a user host to gain access to a public domain network, such as the Internet, users must first dial-in or otherwise make a connection with the SSG through a data-receiving interface (not shown in Fig. 5.). As a threshold matter, an authorizer (not shown in Fig. 5) within the LAC serves to authenticate the identity of the user, ensure authorization and ascertain the nature and scope of the public network services that it will provide.

20

According to one embodiment of the present invention, an access point 345 includes one or more DSLAMs 365, 370, 375 that service the copper loops between the access point 345 and the Customer Premises Equipment (CPE) 305, 310, 315. DSLAMs 365, 370, 375 may link locally or via an inter-central office (CO) link to LAC 360.

Figure 9B is a table that includes a list of tunnel IDs 915 indexed by domain names 920. Table 9B may be used in conjunction with table 9A to obtain a tunnel ID 915 associated with a virtual circuit ID 905.

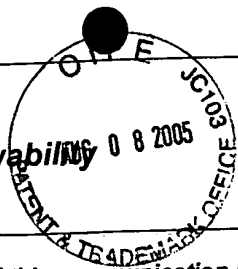
5

Figure 9C is a virtual circuit profile table that contains a list of tunnel IDs 925 indexed by virtual circuit IDs 930. A domain configuration override attribute 935 determines whether a subscriber is limited to establishing a tunnel with a particular domain. In the example, a port having a virtual circuit ID of 94/22 (940) may use tunnel  
10 ID 2210 (945) exclusively.

The tunnel selection configuration override attribute is requested by the domain owner to be placed in virtual circuit profiles. It allows the service provider the capability to ensure that a PPP session originating from a DSLAM port allocated to a particular  
15 domain can connect with only that particular domain, regardless of what domain name is entered in the PPP authentication packet. This provides added security to the owner of the private domain by lessening the likelihood of an unauthorized access to the home gateway of a corporate intranet. The service provider would have the control over which ports are allocated to which domains. The service provider would also have control over  
20 which ports have the tunnel selection configuration attribute in their virtual circuit profile and are, thus, limited to one domain and which virtual circuit profiles do not contain the tunnel selection configuration override attribute and are, thus, free to connect to more  
*Correction 3 y*  
than one domain.



# Notice of Allowability



Application No.

09/712,780

Examiner

David Lazaro

Applicant(s)

SHETH ET AL.

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313, and MPEP 1308.

1. ☒ This communication is responsive to 05/06/04.
2. ☒ The allowed claim(s) is/are 1,2,7-9,14-16,21-24,27-31,35 and 36.
3. ☒ The drawings filed on 13 November 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

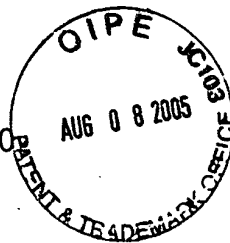
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 06302004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

*Patrice Winder*  
PATRICE WINDER  
PRIMARY EXAMINER



In Claim 15, in line 8, please replace "said service on said network device" with --a domain associated with a domain configuration override attribute, said domain--.

In Claim 15, in line 9, after "network", please insert --,--. ← Correction 4

Correction 5 { In Claim 22, in line 3, please replace "service located on a network device in" with -- domain associated with a domain configuration override attribute, said domain located on--.

In Claim 22, in line 7, after "request", please insert --, said service request optionally including a domain identifier--.

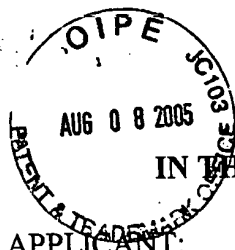
Correction 5 { In Claim 30, in line 3, please replace "service located on a network device in" with -- domain associated with a domain configuration override attribute, said domain located on--.

In Claim 30, line 10, after "request", please insert --, said service request optionally including a domain identifier--.

### REASONS FOR ALLOWANCE

4. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance is based on the remarks made by Applicants concerning the "domain configuration override attribute". Specifically, the Applicants defined the "domain configuration override attribute" based on a citation from the Specification (Page 16 of 21, in the Remarks section filed 05/06/2004). As such, the examiner could not find any prior art establishing a common meaning or definition for a



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Purnam Sheth et al.  
SERIAL NO.: 09/712,780  
FILING DATE: November 13, 2000  
TITLE: PPP DOMAIN NAME AND L2TP TUNNEL SELECTION  
CONFIGURATION OVERRIDE  
EXAMINER: Lazaro, David  
ART UNIT: 2155

**CERTIFICATE OF MAILING**

I hereby certify that this paper is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450, on the date printed below:

Date: 5/6/04

Name: Sharon E. Byam  
Sharon E. Byam

Mail Stop Non-Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT**

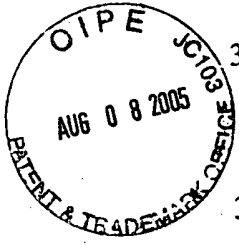
Dear Sir:

This paper is responsive to the Office Action dated February 9, 2004. Please amend the above-identified application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims, which begins on page 5 of this paper.

**Remarks / Arguments** begin on page 13 of this paper.



32-34. (Canceled)

35. (Currently Amended) The access server of claim 30 [33] wherein said assessor is capable of performing a table lookup based upon a Virtual Path Identifier (VPI) / Virtual Channel Identifier (VCI) associated with said virtual circuit.

*Correction 7 ✓*

36. (Currently Amended) The access server of claim 31 [34] wherein said receiving interface comprises at least one access multiplexer, each access multiplexer having a plurality of inputs for receiving a service request, each of said inputs being associated with a particular subscriber virtual circuit.